

REMARKS

Claims 1-61 are pending in the application. Claims 1-5, 12, 31-35, 41, 56-58, 60 and 61 are rejected. Claims 6-11, 13-30, 36-40, 42-55 and 59 are withdrawn from consideration. Applicant has canceled claim 61. Claims 1-5, 12, 31-35, 41 and 56-60 have been amended.

Restriction/Election Requirement

Applicant maintains its traversal of the Examiner's requirement for restriction on the basis presented in Applicant's paper filed on July 29, 2002. Applicant notes and appreciates the Examiner's detailed explanation of the content of Groups I through III, and the explanation of why the Examiner considers the inventions in the three groups to be distinct. Specifically, the Examiner views them as combination and sub-combination inventions. However, such distinction is appropriate where separate claim groups have been presented in the same application on the basis of separate independent claims directed to a combination and a sub-combination, respectively.

In the present case, the claims in the non-elected groups are dependent upon claims in the elected groups. This removes each and every basis for a restriction. First, if the claims in the elected group are found to be patentable, as currently presented or later amended, the dependent claims necessarily would be patentable as well. Second, solely on the basis of their dependency, the dependent claims are directed to an invention that is not distinct from the invention in the independent claims. Third, if the Examiner's search covered all classes and subclasses pertinent to the subcombinations in the independent claims of the elected group, the search should have included art relevant to the subject matter of the combinations in the dependent claims as well. Finally, Applicant respectfully submits that there is no additional burden on the Examiner in examining the dependent claims and, for the reasons given herein, a full examination of claims to the elected invention and the non-elected inventions would be fully consistent with the USPTO's strategic plan.

Information Disclosure Statement

The Examiner states in the Office Action that some of the references listed do not exist in the application filed. However, all such references had been submitted in an Information

Disclosure Statement filed on April 15, 2002, consistent with the requirements of 37 C.F.R. § 1.97. Applicant is herewith submitting a duplicate copy of the submission made on April 15, 2002, including mailroom stamped filing receipt indicating that the statement with references was actually received by the USPTO. Accordingly, Applicant respectfully submits that the date of April 15, 2002 is the date for purposes of determining compliance with the requirements of 37 C.F.R. § 1.97 and 1.98. If there is any error in this case, on the basis of the submitted evidence, it was the responsibility of the Patent and Trademark Office in failing to maintain its files. The Applicant discharged its duty. Accordingly, Applicant should not be penalized for errors in the USPTO filing system. However, Applicant is willing to assist the USPTO by submitting the enclosed duplicate copies. Full consideration is respectfully requested.

Double Patenting

Claims 1-5, 12, 31-36, 41, 56-58, 60 and 61 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 8 of US Patent No. 6,052,681 (Harvey). The Examiner considers them not to be patentably distinct because the use of "protocol encoded form" and "syntax-normalized form" as recited in claim 8 are the same as the "raw form" and "normalized form" as claimed.

Applicant traverses this rejection and submits that the claims are patentably distinct. However, in order to remove this basis for rejection in the most cost effective way, Applicant will submit a Terminal Disclaimer upon indication that the claims are otherwise allowable.

Claim Rejections - 35 U.S.C. § 112

Claims 56 and 61 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. This rejection is traversed.

The Examiner notes that claim 56 recites a "directory service" in the preamble but in the body of the claim requires functions of "finding" and "transferring". Applicant respectfully submits that this feature is explained at pages 4 and 5 of the application as well as at page 24 and 25. The disclosed directory service, which could be based on an X.500 directory standard, for example, would use syntax-normalized data for purposes of indexing and searching (finding), and would use protocol encoded raw data for inputting and outputting from the data base

(transferring). This feature is detailed in the specification and is appropriately defined as a directory service in the claim.

Claim 61 has been canceled, thereby rendering the rejection moot.

Claim Rejections - 35 U.S.C. § 102

Claims 1-5, 12, 31-35, 41, 56-58 and 60 are rejected under 35 U.S.C. § 102(b) as being anticipated by the publication "An Object-Oriented Approach to Directory Systems," by C.M.R. Lung, IEEE Region X Conference on Computer and Communication Systems, September 1990, Hong Kong, pages 736-740 (Leung). This rejection is traversed.

As a preliminary matter, Applicant wishes to note for the Examiner's convenience that the reference to Leung was also published at the first Australian Conference on Telecommunications Software (ACTS '91) held in Melbourne, Australia from April 22-24, 1991. The article appears at pages 85-89, and was specifically cited in the above referenced application at page 3, lines 16-19. It also was identified in the IDS submitted on April 15, 2002, and a copy is enclosed as already noted. Whether one or the other publication is considered, the claimed invention is clearly patentable .

First, as stated by the Applicant at page 3 of the present application, the data base scheme in Leung uses a single entry table which holds detailed information about each directory object. At lines 20-23, Applicant points to the Rumbaugh et al article as identifying why the use of a single table for all entities is not a good approach to relational data base design. Second, again at page 3, the Applicant notes that the disclosed GDSA Project arrangement is "incomplete in its implementation of X.500." Third, with regard to the competence of the reference, Applicant respectfully notes that the article by Leung in its conclusions at page 739, column 2, acknowledges the incomplete state with which the reported "prototype X.500 directory system" then existed. Specifically, Lung states that it is desirable to replace an existing DIVP with an object-oriented DBMS, requiring a new database schema. Further, if not based on an object-oriented model, the IAM conceptual schema must be mapped to a target database schema to define a new structural part. Finally, and of greatest importance, the only portion of the entire disclosure in Lung that may be relevant to the present invention can be found at Figure 6 and its

discussion at lines 1-14 of column 1, page 739. Indeed, here the only relevant statement is that the reported prototype system has a single table, an ENTRY table, to hold information about each directory object. As described, each record holds the system identifier of an object and an attribute value of an attribute type of the object in both normalized and raw forms. The normalized values allow efficient value matching of all attribute types to the use of standard SQL query language.

Applicant respectfully submits that the foregoing is not an enabling teaching of the prototype system or its features, both because of the limited detail of the disclosure and the admittedly incomplete state of the project. Further, the brief disclosure in Leung is not even a description of anything that occurred in the United States.

The description in Leung is wholly inadequate, as compared to the disclosure in the present application, which provides (1) multiple examples of the use of combined normalized data and raw data, (2) where the normalized data is in "syntax-normalized" and the raw data is in a "protocol encoded form", and (3) the data is stored in at least two tables, a hierarchy table and an object table as illustrated at pages 25 and 26, and (4) the specific and distinct uses of the two types of data for inputting and outputting information, as well as the storing and indexing of information in a database system is clearly disclosed.

The Examiner provides specific comments as to what the Examiner believes the Leung reference "teaches." As already noted, Applicant traverses the rejection on the basis that Lung has no enabling teaching, thus precluding it from consideration as a competent reference under 35 U.S.C. § 102(b) and is not evidence of prior public use or disclosure in the U.S., thus precluding it from consideration as evidence of prior art activity under § 102(a).

Nonetheless, in order to clarify the precise scope of the invention, Applicant has amended the claims to expressly state that both "syntax-normalized form data" and "protocol encoded form raw data" are stored concurrently. Second, the claims have been amended to indicate that the storage occurs in "at least two" tables, with reference to the hierarchy table and the object table that are present in the full conceptual design that implements the X.500 services. Such tables are explained at pages 25-39 where a detailed description of the X.500 services, including

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navigation, read, compare and search are presented on the basis of the use of normalized and raw data values. Further, this same dual-table arrangement is disclosed beginning at page 39 for the logical design that implements that X.500 functionality, and again both normalized and raw data are presented in hierarchy and object tables. The hierarchy table is disclosed in detail beginning at page 42 and the object table at page 43.

Applicant respectfully submits that Leung does not teach the use of at least two entry tables, syntax-normalized data and protocol-encoded raw data, the storage and searching functions and structures as now set forth in the claims. Further,. Applicant submits that Leung is not relevant or enabling prior art . Accordingly, all of the pending claims in the application should be allowable.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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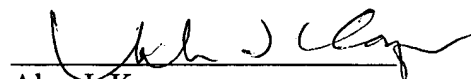
WASHINGTON OFFICE



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PATENT TRADEMARK OFFICE

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

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IN THE CLAIMS:

The claims are amended as follows:

Technology Center 2100

1. (Amended) A method of storing data in a database, the method comprising the steps of:

obtaining both a protocol encoded raw form of a data to be stored and a syntax-normalised form of said data; and

storing concurrently both the syntax-normalised form and the protocol encoded raw form of said data.

2. (Amended) A method of storing data in a database, as claimed in claim 1, wherein said obtaining step comprises:

first obtaining a protocol encoded raw form of a data and thereafter generating said syntax-normalised form from said protocol encoded raw form of the data.

3. (Amended) A method of storing data in a database, as claimed in claim 1, wherein said storing step comprises:

maintaining both the syntax-normalised form and the protocol encoded raw form of the data for data base searching and data retrieval.

4. (Amended) A method of storing data in a database, as claimed in claim 3, wherein said maintaining step comprises maintaining said protocol encoded raw form and syntax-normalised form of a data in at least [one table] two tables concurrently.

5. (Amended) A method of storing data in a database, as claimed in claim 4, wherein said maintaining step further comprises correlating the storage location of said protocol encoded raw form and said normalised form in said at least one table.

12. (Amended) A method of locating data in a database, wherein said data is stored linked to a syntax-normalised form of the data, comprising the step of:

locating said protocol encoded raw data by searching on said syntax-normalised form of the data.

31. (Amended) A database apparatus comprising:

means for obtaining both a protocol encoded raw form of a data to be stored and a syntax-normalised form of said data; and

a storage medium for storing concurrently both the syntax-normalised form and the protocol encoded raw form of said data.

32. (Amended) A database apparatus for storing data in a database, as claimed in claim 31, wherein said means for obtaining comprises:

means for first obtaining a protocol encoded raw form of a data and thereafter generating said syntax-normalised form from said protocol encoded raw form of the data.

33. (Amended) A database apparatus for storing data in a database, as claimed in claim 31, wherein said storage medium is operative to maintain both the syntax-normalised form and the protocol encoded raw form of the data for data base searching and data retrieval.

34. (Amended) A database apparatus for storing data in a database, as claimed in claim 33, wherein said storage medium is operative to maintain said protocol encoded raw form and syntax-normalised form of a data in at least [one table] two tables.

35. (Amended) A database apparatus for storing data in a database, as claimed in claim [33]34, wherein said s

storage locations of said protocol encoded raw form and said syntax-normalised form of data are correlated in said at least [one table] two tables.

41. (Amended) An apparatus for locating data in a database, wherein said data is stored in a table in a protocol encoded raw form and linked to a concurrently stored syntax-normalised form of the data, comprising:

means for locating said protocol encoded raw form of the data by searching on said syntax-normalised form of the data.

56. (Amended) In a directory service system, having a database in which data is stored in a first form, being a protocol encoded raw form, and a second form, being a syntax-normalised form, apparatus for transferring data into and out of the database, comprising:

means for finding data in the database using a syntax-normalised form; and

means for transferring data out of the database using a protocol encoded raw form.

57. (Amended) A computer program product, including a storage medium for storing a computer program, the computer program being executable to perform a method as claimed in any one of claims 1-[29]5.

58. (Amended) A method as claimed in any one of claims 1-6 and 27-29 wherein the protocol encoded raw form of data is stored in ASN.1 format.

60. (Amended) An apparatus as claimed in any one of claims 31-43 wherein said protocol encoded raw data or data is stored in ASN.1 format.